

SEQUENCE LISTING

<110> Walke, D. Wade
 Hilbun, Erin
 Scoville, John
 Friddle, Carl Johan
 Hu, Yi
 Turner, C. Alexander Jr.

<120> Novel Human Proteases and Polynucleotides Encoding the Same

<130> LEX-0221-USA

<150> US 60/227,104
<151> 2000-08-22

<150> US 60/233,796
<151> 2000-09-19

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<212> PRT

<213> homo sapiens

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<212> PRT

<213> homo sapiens

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cggccctgtc	tccgagt	ctgcccag	cagtgg	tgaggc	gtccc	2940	
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<213> homo sapiens

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Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
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Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
65 70 75 80
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu
85 90 95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val
100 105 110
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
115 120 125

Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
 130 135 140
 Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly
 145 150 155 160
 Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly
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 Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg
 180 185 190
 Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg
 195 200 205
 Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
 210 215 220
 Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val
 225 230 235 240
 Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
 245 250 255
 Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
 260 265 270
 Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
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 Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile
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 Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu
 305 310 315 320
 Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys
 325 330 335
 Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His
 340 345 350
 His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
 355 360 365
 Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
 370 375 380
 Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
 385 390 395 400
 Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
 405 410 415
 Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
 420 425 430
 Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
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 Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
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 Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
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 Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe
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 Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
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 Pro Tyr Phe Cys Lys Thr Lys Gly Pro Pro Leu Asp Gly Thr Glu
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 Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
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 Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys
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 Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Val Arg Ser Arg Ser
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 Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Arg Pro Cys Leu
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 Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
 595 600 605
 Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
 610 615 620
 Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp

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Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser			
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Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val			
675	680	685	
Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly			
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Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu			
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Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro			
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Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His			
740	745	750	
Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro			
755	760	765	
Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu			
770	775	780	
Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly			
785	790	795	800
Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly			
805	810	815	
Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu			
820	825	830	
Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr			
835	840	845	
Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly			
850	855	860	
Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His			
865	870	875	880
His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro			
885	890	895	
Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val			
900	905	910	
Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val			
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Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His			
930	935	940	
Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg			
945	950	955	960
Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala			
965	970	975	
Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln			
980	985	990	
Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp			
995	1000	1005	
Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn			
1010	1015	1020	
His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro			
1025	1030	1035	1040
Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys			
1045	1050	1055	
Ile Ser Ser Met Cys Ala Ala Glu Pro Cys Thr Gly Asp Arg Ser Val			
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Phe Cys Gln Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr			
1075	1080	1085	
His Arg Leu Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn			
1090	1095	1100	
Pro Gly Pro Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro			
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Gly Ser Pro Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Glu Pro			
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Pro	Gly	Lys	Pro	Thr	Gly	Ser	Glu	Asp	His	Gln	His	Gly	Arg	Ala	Thr
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Gln	Leu	Pro	Gly	Ala	Leu	Asp	Thr	Ser	Ser	Pro	Gly	Thr	Gln	His	Pro
1155							1160					1165			
Phe	Ala	Pro	Glu	Thr	Pro	Ile	Pro	Gly	Ala	Ser	Trp	Ser	Ile	Ser	Pro
1170							1175					1180			
Thr	Thr	Pro	Gly	Gly	Leu	Pro	Trp	Gly	Trp	Thr	Gln	Thr	Pro	Thr	Pro
1185							1190				1195			1200	
Val	Pro	Glu	Asp	Lys	Gly	Gln	Pro	Gly	Glu	Asp	Leu	Arg	Pro	Ala	Arg
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<212> DNA
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<211> 1219

<212> PRT

<213> homo sapiens

<400> 10

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			20					25				30			
Gly	Lys	Leu	Ser	Asp	Tyr	Gly	Val	Thr	Val	Pro	Cys	Ser	Thr	Asp	Phe
				35			40				45				
Arg	Gly	Arg	Phe	Leu	Ser	His	Val	Val	Ser	Gly	Pro	Ala	Ala	Ala	Ser
				50			55				60				
Ala	Gly	Ser	Met	Val	Val	Asp	Thr	Pro	Pro	Thr	Leu	Pro	Arg	His	Ser
				65			70			75			80		
Ser	His	Leu	Arg	Val	Ala	Arg	Ser	Pro	Leu	His	Pro	Gly	Gly	Thr	Leu
					85				90			95			
Trp	Pro	Gly	Arg	Val	Gly	Arg	His	Ser	Leu	Tyr	Phe	Asn	Val	Thr	Val
				100			105				110				
Phe	Gly	Lys	Glu	Leu	His	Leu	Arg	Leu	Arg	Pro	Asn	Arg	Arg	Leu	Val
				115			120				125				
Val	Pro	Gly	Ser	Ser	Val	Glu	Trp	Gln	Glu	Asp	Phe	Arg	Glu	Leu	Phe
					130		135				140				
Arg	Gln	Pro	Leu	Arg	Gln	Glu	Cys	Val	Tyr	Thr	Gly	Gly	Val	Thr	Gly
					145		150			155			160		
Met	Pro	Gly	Ala	Ala	Val	Ala	Ile	Ser	Asn	Cys	Asp	Gly	Leu	Ala	Gly
						165			170			175			
Leu	Ile	Arg	Thr	Asp	Ser	Thr	Asp	Phe	Phe	Ile	Glu	Pro	Leu	Glu	Arg
					180			185			190				
Gly	Gln	Gln	Glu	Lys	Glu	Ala	Ser	Gly	Arg	Thr	His	Val	Val	Tyr	Arg
					195			200			205				
Arg	Glu	Ala	Val	Gln	Gln	Glu	Trp	Ala	Glu	Pro	Asp	Gly	Asp	Leu	His
					210		215				220				
Asn	Glu	Ala	Phe	Gly	Leu	Gly	Asp	Leu	Pro	Asn	Leu	Leu	Gly	Leu	Val
					225		230				235			240	
Gly	Asp	Gln	Leu	Gly	Asp	Thr	Glu	Arg	Lys	Arg	Arg	His	Ala	Lys	Pro
						245		250				255			
Gly	Ser	Tyr	Ser	Ile	Glu	Val	Leu	Leu	Val	Val	Asp	Asp	Ser	Val	Val
					260			265			270				
Arg	Phe	His	Gly	Lys	Glu	His	Val	Gln	Asn	Tyr	Val	Leu	Thr	Leu	Met
					275			280			285				
Asn	Ile	Val	Asp	Glu	Ile	Tyr	His	Asp	Glu	Ser	Leu	Gly	Val	His	Ile
					290			295			300				
Asn	Ile	Ala	Leu	Val	Arg	Leu	Ile	Met	Val	Gly	Tyr	Arg	Gln	Ser	Leu

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Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg	Ser Leu Glu Gln Val	Cys	
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Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His	Ala Glu His		
340	345	350	
His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly			
355	360	365	
Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu			
370	375	380	
Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr			
385	390	395	400
Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala			
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Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala			
420	425	430	
Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg			
435	440	445	
Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala			
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Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu			
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Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe			
485	490	495	
Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn			
500	505	510	
Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu			
515	520	525	
Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser			
530	535	540	
Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys			
545	550	555	560
Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Val Arg Ser Arg Ser			
565	570	575	
Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu			
580	585	590	
Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly			
595	600	605	
Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr			
610	615	620	
Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp			
625	630	635	640
Asp Asp Ala Gln Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly			
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Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser			
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Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val			
675	680	685	
Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly			
690	695	700	
Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu			
705	710	715	720
Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro			
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Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His			
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Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro			
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Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu			
770	775	780	
Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly			
785	790	795	800
Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly			
805	810	815	

Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu
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 Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr
 835 840 845
 Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly
 850 855 860
 Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His
 865 870 875 880
 His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro
 885 890 895
 Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val
 900 905 910
 Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val
 915 920 925
 Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His
 930 935 940
 Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg
 945 950 955 960
 Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala
 965 970 975
 Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln
 980 985 990
 Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp
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Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
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Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
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Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
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Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
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Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
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Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
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Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
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 His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro
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 Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val
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His Arg Leu Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn		
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Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser
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Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser
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Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val
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Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe
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Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg
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 Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
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 Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
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 Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
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 Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile
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 325 330 335
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 His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
 355 360 365
 Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
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 Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
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 Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
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 Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
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 Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
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 Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
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 Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
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 Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
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 Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
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 Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp
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 Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser
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 Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly

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Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro		720
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Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His		
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Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro		
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Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu		
770	775	780
Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly		
785	790	795
Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly		800
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Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu		
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Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly		
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Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His		
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His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro		880
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Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val		
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Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val		
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Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His		
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Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg		
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Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln		
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Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp		
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Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn		
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His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro		
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Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys		1040
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Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr His Arg Leu		
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Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn Pro Gly Pro		
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Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro Gly Ser Pro		
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Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro Pro Gly Lys		1120
1125	1130	1135
Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr Gln Leu Pro		
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Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro Phe Ala Pro		
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Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro Pro Thr Thr Pro		
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<213> homo sapiens

<400> 15

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gat	gac	gtgg	ggat	tc	ttgt	1980
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Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe						
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Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser						
50	55	60				
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser						
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Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu						
85	90	95				
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val						
100	105	110				
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val						
115	120	125				
Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe						
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Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly						
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Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly						
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Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg						
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Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg						
195	200	205				
Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His						
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Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val						
225	230	235	240			
Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro						
245	250	255				
Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val						
260	265	270				
Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met						
275	280	285				
Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile						
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Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu						
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Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys						
325	330	335				
Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His						
340	345	350				
His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly						
355	360	365				
Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu						
370	375	380				

Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
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 Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
 405 410 415
 Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
 420 425 430
 Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
 435 440 445
 Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
 450 455 460
 Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
 465 470 475 480
 Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe
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 Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
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 Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
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 Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
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 Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
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 Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
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 Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp
 625 630 635 640
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 Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser
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 675 680 685
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 690 695 700
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 725 730 735
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 Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro
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 785 790 795 800
 Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly
 805 810 815
 Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu
 820 825 830
 Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Met Asp Thr
 835 840 845
 Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly
 850 855 860
 Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His
 865 870 875 880
 His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro

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Ile Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val			
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Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val			
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Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His			
930	935	940	
Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg			
945	950	955	960
Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala			
965	970	975	
Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln			
980	985	990	
Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp			
995	1000	1005	
Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn			
1010	1015	1020	
His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro			
1025	1030	1035	1040
Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys			
1045	1050	1055	
Ile Ser Ser Met Cys Ala Ala Glu Pro Cys Thr Gly Asp Arg Ser Val			
1060	1065	1070	
Phe Cys Gln Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr			
1075	1080	1085	
His Arg Leu Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn			
1090	1095	1100	
Pro Gly Pro Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro			
1105	1110	1115	1120
Gly Ser Pro Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro			
1125	1130	1135	
Pro Gly Lys Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr			
1140	1145	1150	
Gln Leu Pro Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro			
1155	1160	1165	
Phe Ala Pro Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro			
1170	1175	1180	
Thr Thr Pro Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro			
1185	1190	1195	1200
Val Pro Glu Asp Lys Gly Gln Pro Gly Glu Asp Leu Arg His Pro Gly			
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<212> DNA
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Ala Leu Cys Thr Ala Ala Gly Ser Arg Thr Pro Glu Leu His Leu Ser
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Gly Lys Leu Ser Asp Tyr Gly Val Thr Val Pro Cys Ser Thr Asp Phe

35	40	45
Arg Gly Arg Phe Leu Ser His Val Val Ser Gly Pro Ala Ala Ala Ser		
50	55	60
Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser		
65	70	75
Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu		80
85	90	95
Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val		
100	105	110
Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val		
115	120	125
Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe		
130	135	140
Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly		
145	150	155
Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly		160
165	170	175
Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg		
180	185	190
Gly Gln Gln Glu Lys Glu Ala Ser Gly Arg Thr His Val Val Tyr Arg		
195	200	205
Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His		
210	215	220
Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val		
225	230	235
Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro		
245	250	255
Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val		
260	265	270
Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met		
275	280	285
Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile		
290	295	300
Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu		
305	310	315
Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys		
325	330	335
Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His		
340	345	350
His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly		
355	360	365
Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu		
370	375	380
Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr		
385	390	395
Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala		
405	410	415
Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala		
420	425	430
Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg		
435	440	445
Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala		
450	455	460
Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu		
465	470	475
Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe		
485	490	495
Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn		
500	505	510
Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu		
515	520	525
Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser		
530	535	540

Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys
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 Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Val Arg Ser Arg Ser
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 Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
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 Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
 595 600 605
 Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
 610 615 620
 Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp
 625 630 635 640
 Asp Asp Ala Gln Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly
 645 650 655
 Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser
 660 665 670
 Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val
 675 680 685
 Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly
 690 695 700
 Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu
 705 710 715 720
 Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro
 725 730 735
 Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His
 740 745 750
 Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro
 755 760 765
 Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu
 770 775 780
 Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly
 785 790 795 800
 Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly
 805 810 815
 Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu
 820 825 830
 Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Met Asp Thr
 835 840 845
 Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly
 850 855 860
 Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His
 865 870 875 880
 His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro
 885 890 895
 Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val
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 Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val
 915 920 925
 Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His
 930 935 940
 Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg
 945 950 955 960
 Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala
 965 970 975
 Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln
 980 985 990
 Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp
 995 1000 1005
 Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn
 1010 1015 1020
 His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro
 1025 1030 1035 1040
 Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys

	1045	1050	1055
Ile Ser Ser Thr Glu Pro Cys Thr Gly Asp Arg Ser Val Phe Cys Gln			
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Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr His Arg Leu			
1075	1080	1085	
Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn Pro Gly Pro			
1090	1095	1100	
Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro Gly Ser Pro			
1105	1110	1115	1120
Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro Pro Gly Lys			
1125	1130	1135	
Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr Gln Leu Pro			
1140	1145	1150	
Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro Phe Ala Pro			
1155	1160	1165	
Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro Thr Thr Pro			
1170	1175	1180	
Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro Val Pro Glu			
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Asp Lys Gly Gln Pro Gly Glu Asp Leu Arg His Pro Gly Thr Ser Leu			
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Pro Ala Asp Leu Pro Gly Arg Pro Pro Glu Pro Tyr Ser Glu Ser Asp			
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<210> 19
<211> 3759
<212> DNA
<213> homo sapiens

<400> 19

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<210> 20

<211> 1252

<212> PRT

<213> homo sapiens

<400> 20

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			20				25					30			
Gly	Lys	Leu	Ser	Asp	Tyr	Gly	Val	Thr	Val	Pro	Cys	Ser	Thr	Asp	Phe
			35				40				45				
Arg	Gly	Arg	Phe	Leu	Ser	His	Val	Val	Ser	Gly	Pro	Ala	Ala	Ala	Ser
			50				55				60				
Ala	Gly	Ser	Met	Val	Val	Asp	Thr	Pro	Pro	Thr	Leu	Pro	Arg	His	Ser
			65				70				75			80	
Ser	His	Leu	Arg	Val	Ala	Arg	Ser	Pro	Leu	His	Pro	Gly	Gly	Thr	Leu
							85				90			95	
Trp	Pro	Gly	Arg	Val	Gly	Arg	His	Ser	Leu	Tyr	Phe	Asn	Val	Thr	Val
							100				105			110	
Phe	Gly	Lys	Glu	Leu	His	Leu	Arg	Leu	Arg	Pro	Asn	Arg	Arg	Leu	Val
			115				120				125				
Val	Pro	Gly	Ser	Ser	Val	Glu	Trp	Gln	Glu	Asp	Phe	Arg	Glu	Leu	Phe
			130				135				140				
Arg	Gln	Pro	Leu	Arg	Gln	Glu	Cys	Val	Tyr	Thr	Gly	Gly	Val	Thr	Gly
			145				150				155			160	
Met	Pro	Gly	Ala	Ala	Val	Ala	Ile	Ser	Asn	Cys	Asp	Gly	Leu	Ala	Gly
							165				170			175	
Leu	Ile	Arg	Thr	Asp	Ser	Thr	Asp	Phe	Phe	Ile	Glu	Pro	Leu	Glu	Arg
			180				185				190				
Gly	Gln	Gln	Glu	Lys	Glu	Ala	Ser	Gly	Arg	Thr	His	Val	Val	Tyr	Arg
			195				200				205				

Arg Glu Ala Val Gln Gln Glu Trp Ala Glu Pro Asp Gly Asp Leu His
 210 215 220
 Asn Glu Ala Phe Gly Leu Gly Asp Leu Pro Asn Leu Leu Gly Leu Val
 225 230 235 240
 Gly Asp Gln Leu Gly Asp Thr Glu Arg Lys Arg Arg His Ala Lys Pro
 245 250 255
 Gly Ser Tyr Ser Ile Glu Val Leu Leu Val Val Asp Asp Ser Val Val
 260 265 270
 Arg Phe His Gly Lys Glu His Val Gln Asn Tyr Val Leu Thr Leu Met
 275 280 285
 Asn Ile Val Asp Glu Ile Tyr His Asp Glu Ser Leu Gly Val His Ile
 290 295 300
 Asn Ile Ala Leu Val Arg Leu Ile Met Val Gly Tyr Arg Gln Ser Leu
 305 310 315 320
 Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys
 325 330 335
 Arg Trp Ala His Ser Gln Gln Arg Gln Asp Pro Ser His Ala Glu His
 340 345 350
 His Asp His Val Val Phe Leu Thr Arg Gln Asp Phe Gly Pro Ser Gly
 355 360 365
 Tyr Ala Pro Val Thr Gly Met Cys His Pro Leu Arg Ser Cys Ala Leu
 370 375 380
 Asn His Glu Asp Gly Phe Ser Ser Ala Phe Val Ile Ala His Glu Thr
 385 390 395 400
 Gly His Val Leu Gly Met Glu His Asp Gly Gln Gly Asn Gly Cys Ala
 405 410 415
 Asp Glu Thr Ser Leu Gly Ser Val Met Ala Pro Leu Val Gln Ala Ala
 420 425 430
 Phe His Arg Phe His Trp Ser Arg Cys Ser Lys Leu Glu Leu Ser Arg
 435 440 445
 Tyr Leu Pro Ser Tyr Asp Cys Leu Leu Asp Asp Pro Phe Asp Pro Ala
 450 455 460
 Trp Pro Gln Pro Pro Glu Leu Pro Gly Ile Asn Tyr Ser Met Asp Glu
 465 470 475 480
 Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe
 485 490 495
 Arg Thr Phe Glu Pro Cys Lys Gln Leu Trp Cys Ser His Pro Asp Asn
 500 505 510
 Pro Tyr Phe Cys Lys Thr Lys Lys Gly Pro Pro Leu Asp Gly Thr Glu
 515 520 525
 Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser
 530 535 540
 Pro Glu Gln Thr Tyr Gly Gln Asp Gly Gly Trp Ser Ser Trp Thr Lys
 545 550 555 560
 Phe Gly Ser Cys Ser Arg Ser Cys Gly Gly Val Arg Ser Arg Ser
 565 570 575
 Arg Ser Cys Asn Asn Pro Ser Pro Ala Tyr Gly Gly Arg Pro Cys Leu
 580 585 590
 Gly Pro Met Phe Glu Tyr Gln Val Cys Asn Ser Glu Glu Cys Pro Gly
 595 600 605
 Thr Tyr Glu Asp Phe Arg Ala Gln Gln Cys Ala Lys Arg Asn Ser Tyr
 610 615 620
 Tyr Val His Gln Asn Ala Lys His Ser Trp Val Pro Tyr Glu Pro Asp
 625 630 635 640
 Asp Asp Ala Gln Lys Cys Glu Leu Ile Cys Gln Ser Ala Asp Thr Gly
 645 650 655
 Asp Val Val Phe Met Asn Gln Val Val His Asp Gly Thr Arg Cys Ser
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 Tyr Arg Asp Pro Tyr Ser Val Cys Ala Arg Gly Glu Cys Val Pro Val
 675 680 685
 Gly Cys Asp Lys Glu Val Gly Ser Met Lys Ala Asp Asp Lys Cys Gly
 690 695 700
 Val Cys Gly Gly Asp Asn Ser His Cys Arg Thr Val Lys Gly Thr Leu

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Gly Lys Ala Ser Lys Gln Ala Gly Ala Leu Lys Leu Val Gln Ile Pro			
725	730	735	
Ala Gly Ala Arg His Ile Gln Ile Glu Ala Leu Glu Lys Ser Pro His			
740	745	750	
Arg Ser Val Val Lys Asn Gln Val Thr Gly Ser Phe Ile Leu Asn Pro			
755	760	765	
Lys Gly Lys Glu Ala Thr Ser Arg Thr Phe Thr Ala Met Gly Leu Glu			
770	775	780	
Trp Glu Asp Ala Val Glu Asp Ala Lys Glu Ser Leu Lys Thr Ser Gly			
785	790	795	800
Pro Leu Pro Glu Ala Ile Ala Ile Leu Ala Leu Pro Pro Thr Glu Gly			
805	810	815	
Gly Pro Arg Ser Ser Leu Ala Tyr Lys Tyr Val Ile His Glu Asp Leu			
820	825	830	
Leu Pro Leu Ile Gly Ser Asn Asn Val Leu Leu Glu Glu Met Asp Thr			
835	840	845	
Tyr Glu Trp Ala Leu Lys Ser Trp Ala Pro Cys Ser Lys Ala Cys Gly			
850	855	860	
Gly Gly Ile Gln Phe Thr Lys Tyr Gly Cys Arg Arg Arg Arg Asp His			
865	870	875	880
His Met Val Gln Arg His Leu Cys Asp His Lys Lys Arg Pro Lys Pro			
885	890	895	
Ile Arg Arg Arg Cys Asn Gln His Pro Cys Ser Gln Pro Val Trp Val			
900	905	910	
Thr Glu Glu Trp Gly Ala Cys Ser Arg Ser Cys Gly Lys Leu Gly Val			
915	920	925	
Gln Thr Arg Gly Ile Gln Cys Leu Leu Pro Leu Ser Asn Gly Thr His			
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Lys Val Met Pro Ala Lys Ala Cys Ala Gly Asp Arg Pro Glu Ala Arg			
945	950	955	960
Arg Pro Cys Leu Arg Val Pro Cys Pro Ala Gln Trp Arg Leu Gly Ala			
965	970	975	
Trp Ser Gln Cys Ser Ala Thr Cys Gly Glu Gly Ile Gln Gln Arg Gln			
980	985	990	
Val Val Cys Arg Thr Asn Ala Asn Ser Leu Gly His Cys Glu Gly Asp			
995	1000	1005	
Arg Pro Asp Thr Val Gln Val Cys Ser Leu Pro Ala Cys Gly Gly Asn			
1010	1015	1020	
His Gln Asn Ser Thr Val Arg Ala Asp Val Trp Glu Leu Gly Thr Pro			
1025	1030	1035	1040
Glu Gly Gln Trp Val Pro Gln Ser Gly Pro Leu His Pro Ile Asn Lys			
1045	1050	1055	
Ile Ser Ser Met Cys Ala Ala Glu Pro Cys Thr Gly Asp Arg Ser Val			
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Phe Cys Gln Met Glu Val Leu Asp Arg Tyr Cys Ser Ile Pro Gly Tyr			
1075	1080	1085	
His Arg Leu Cys Cys Val Ser Cys Ile Lys Lys Ala Ser Gly Pro Asn			
1090	1095	1100	
Pro Gly Pro Asp Pro Gly Pro Thr Ser Leu Pro Pro Phe Ser Thr Pro			
1105	1110	1115	1120
Gly Ser Pro Leu Pro Gly Pro Gln Asp Pro Ala Asp Ala Ala Glu Pro			
1125	1130	1135	
Pro Gly Lys Pro Thr Gly Ser Glu Asp His Gln His Gly Arg Ala Thr			
1140	1145	1150	
Gln Leu Pro Gly Ala Leu Asp Thr Ser Ser Pro Gly Thr Gln His Pro			
1155	1160	1165	
Phe Ala Pro Glu Thr Pro Ile Pro Gly Ala Ser Trp Ser Ile Ser Pro			
1170	1175	1180	
Thr Thr Pro Gly Gly Leu Pro Trp Gly Trp Thr Gln Thr Pro Thr Pro			
1185	1190	1195	1200
Val Pro Glu Asp Lys Gly Gln Pro Gly Glu Asp Leu Arg His Pro Gly			
1205	1210	1215	

Thr Ser Leu Pro Ala Asp Leu Pro Gly Arg Pro Pro Glu Pro Cys His
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 Pro Thr Gly Thr Phe Thr Leu Cys Val Leu Pro Arg Asp Ser Gln Leu
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 <211> 3750
 <212> DNA
 <213> homo sapiens

<400> 21

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gcagcagg	ctcgaggag	cattgttagt	gacacgccc	ccacactacc	acgacactcc	240
agtacac	cttc	gggtggctcg	cagccctctg	cacccaggag	ggacctgtg	300
gtggggc	actccctcta	cttaatgtc	actgtttcg	gaaaggaact	gcacttgc	360
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Ala Gly Ser Met Val Val Asp Thr Pro Pro Thr Leu Pro Arg His Ser						
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Ser His Leu Arg Val Ala Arg Ser Pro Leu His Pro Gly Gly Thr Leu						
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Trp Pro Gly Arg Val Gly Arg His Ser Leu Tyr Phe Asn Val Thr Val						
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Phe Gly Lys Glu Leu His Leu Arg Leu Arg Pro Asn Arg Arg Leu Val						
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Val Pro Gly Ser Ser Val Glu Trp Gln Glu Asp Phe Arg Glu Leu Phe						
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Arg Gln Pro Leu Arg Gln Glu Cys Val Tyr Thr Gly Gly Val Thr Gly						
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Met Pro Gly Ala Ala Val Ala Ile Ser Asn Cys Asp Gly Leu Ala Gly						
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Leu Ile Arg Thr Asp Ser Thr Asp Phe Phe Ile Glu Pro Leu Glu Arg						
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Ser Leu Ile Glu Arg Gly Asn Pro Ser Arg Ser Leu Glu Gln Val Cys						
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Gln Cys Arg Phe Asp Phe Gly Ser Gly Tyr Gln Thr Cys Leu Ala Phe		
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Cys Ala Pro Gly Lys Trp Cys Phe Lys Gly His Cys Ile Trp Lys Ser		
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Leu Thr Ala Asn Ala Gly Phe Ile Ala Pro Leu Phe Thr Val Thr Leu			
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Leu Gly Thr Pro Gly Val Asn Gln Thr Lys Phe Tyr Ser Glu Glu Glu			
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Ala Glu Leu Lys His Cys Phe Tyr Lys Gly Tyr Val Asn Thr Asn Ser			
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Glu His Thr Ala Val Ile Ser Leu Cys Ser Gly Met Leu Gly Thr Phe			
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Arg Ser His Asp Gly Asp Tyr Phe Ile Glu Pro Leu Gln Ser Met Asp			
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Glu Gln Glu Asp Glu Glu Gln Asn Lys Pro His Ile Ile Tyr Arg			
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Arg Ser Ala Pro Gln Arg Glu Pro Ser Thr Gly Arg His Ala Cys Asp			
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Thr Ser Glu His Lys Asn Arg His Ser Lys Asp Lys Lys Lys Thr Arg			
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Ala Arg Lys Trp Gly Glu Arg Ile Asn Leu Ala Gly Asp Val Ala Ala			
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Leu Asn Ser Gly Leu Ala Thr Glu Ala Phe Ser Ala Tyr Gly Asn Lys			
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Met Val Ser Tyr His Gly Glu Asn Leu Gln His Tyr Ile Leu Thr Leu			
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His Asp Lys Cys Asp Thr Leu Gly Leu Ala Glu Leu Gly Thr Ile Cys			
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Lys Tyr Gly Phe Cys Val Pro Lys Glu Met Asp Val Pro Val Thr Asp			
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